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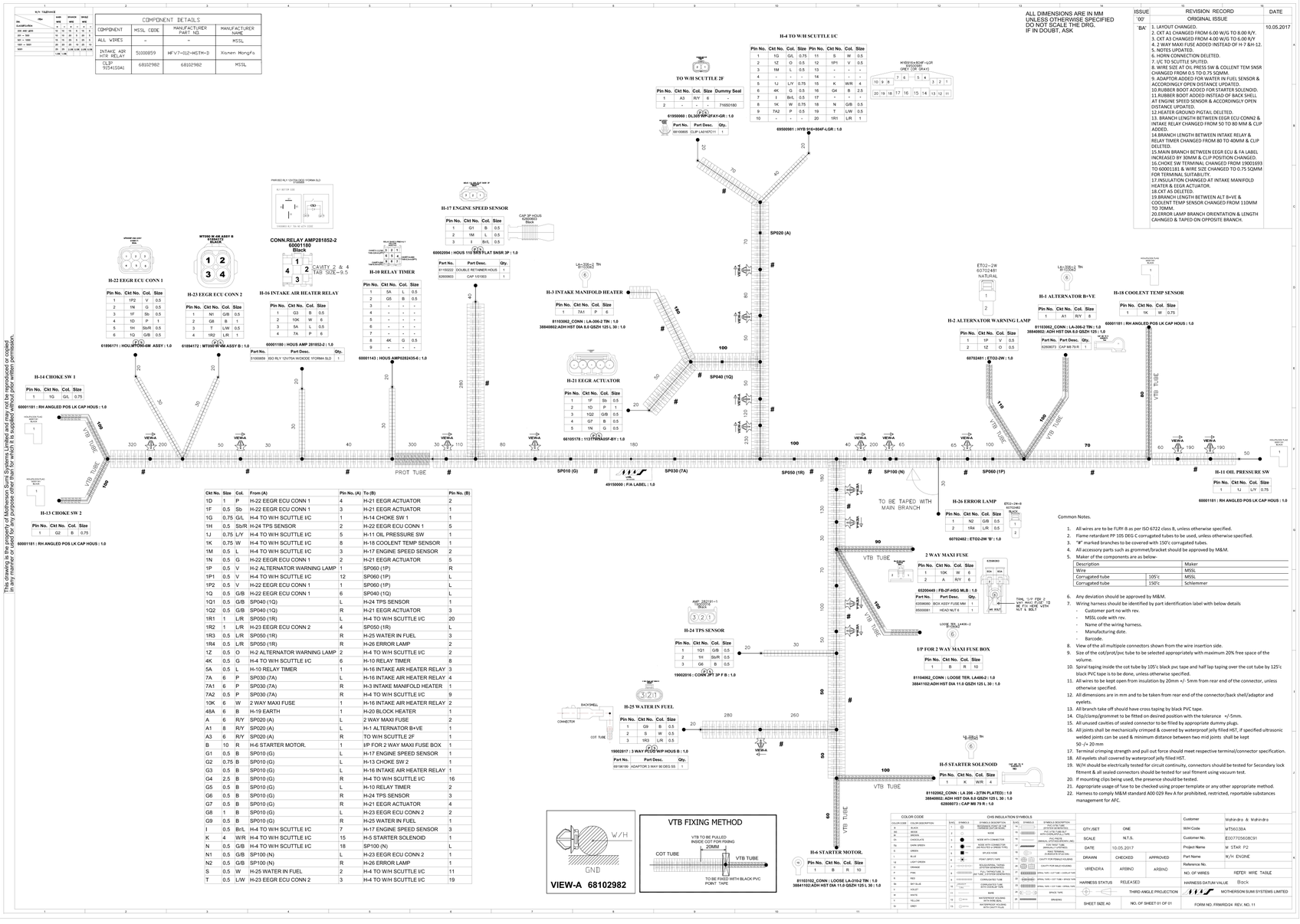
COMPONENT DETAILS			
COMPONENT	MSSL CODE	MANUFACTURER PART NO.	MANUFACTURER NAME
ALL WIRES	--	--	MSSL
INTAKE AIR HTR RELAY	510000859	HFV7-012-HSTH-D	Xiamen Hongfa
CLIP 9354150A1	68102982	68102982	MSSL

ALL DIMENSIONS ARE IN MM
UNLESS OTHERWISE SPECIFIED
DO NOT SCALE THE DRG.
IF IN DOUBT, ASK

ISSUE	REVISION RECORD	DATE
'00'	ORIGINAL ISSUE	
'BA'	1. LAYOUT CHANGED. 2. CKT A1 CHANGED FROM 6.00 W/G TO 8.00 R/Y. 3. CKT A3 CHANGED FROM 4.00 W/G TO 6.00 R/Y 4. 2 WAY MAXI FUSE ADDED INSTEAD OF H-7 &H-12. 5. NOTES UPDATED. 6. HORN CONNECTION DELETED. 7. I/C TO SCUTTLE SPLITED. 8. WIRE SIZE AT OIL PRESS SW & COLLENT TEM SNSR CHANGED FROM 0.5 TO 0.75 SQMM. 9. ADAPTOR ADDED FOR WATER IN FUEL SENSOR & ACCORDINGLY OPEN DISTANCE UPDATED. 10.RUBBER BOOT ADDED FOR STARTER SOLENOID. 11.RUBBER BOOT ADDED INSTEAD OF BACK SHELL AT ENGINE SPEED SENSOR & ACCORDINGLY OPEN DISTANCE UPDATED. 12.HEATER GROUND PIGTAIL DELETED. 13. BRANCH LENGTH BETWEEN EEGR ECU CONN2 & INTAKE RELAY CHANGED FROM 50 TO 80 MM & CLIP ADDED. 14.BRANCH LENGTH BETWEEN INTAKE RELAY & RELAY TIMER CHANGED FROM 80 TO 40MM & CLIP DELETED. 15.MAIN BRANCH BETWEEN EEGR ECU & FA LABEL INCREASED BY 30MM & CLIP POSITION CHANGED. 16.CHOKE SW TERMINAL CHANGED FROM 19001693 TO 60001181 & WIRE SIZE CHANGED TO 0.75 SQMM FOR TERMINAL SUITABILITY. 17.INSULATION CHANGED AT INTAKE MANIFOLD HEATER & EGR ACTUATOR. 18.CKT AS DELETED. 19.BRANCH LENGTH BETWEEN ALT B+VE & COOLENT TEMP SENSOR CHANGED FROM 110MM TO 70MM. 20.ERROR LAMP BRANCH ORIENTATION & LENGTH CAHNGED & TAPED ON OPPOSITE BRANCH.	10.05.2017



Ckt No.	Size	Col.	From (A)	Pin No. (A)	To (B)	Pin No. (B)
1D	1	P	H-22 EEGR ECU CONN 1	4	H-21 EEGR ACTUATOR	2
1F	0.5	Sb	H-22 EEGR ECU CONN 1	3	H-21 EEGR ACTUATOR	1
1G	0.75	G/L	H-4 TO W/H SCUTTLE I/C	1	H-14 CHOKE SW 1	1
1H	0.5	Sb/R	H-24 TPS SENSOR	2	H-22 EEGR ECU CONN 1	5
1J	0.75	L/Y	H-4 TO W/H SCUTTLE I/C	5	H-11 OIL PRESSURE SW	1
1K	0.75	W	H-4 TO W/H SCUTTLE I/C	8	H-18 COOLENT TEMP SENSOR	1
1M	0.5	L	H-4 TO W/H SCUTTLE I/C	3	H-17 ENGINE SPEED SENSOR	2
1N	0.5	G	H-22 EEGR ECU CONN 1	2	H-21 EEGR ACTUATOR	5
1P	0.5	V	H-2 ALTERNATOR WARNING LAMP	1	SP060 (1P)	R
1P1	0.5	V	H-4 TO W/H SCUTTLE I/C	12	SP060 (1P)	L
1P2	0.5	V	H-22 EEGR ECU CONN 1	1	SP060 (1P)	L
1Q	0.5	G/B	H-22 EEGR ECU CONN 1	6	SP040 (1Q)	L
1Q1	0.5	G/B	SP040 (1Q)	L	H-24 TPS SENSOR	1
1Q2	0.5	G/B	SP040 (1Q)	R	H-21 EEGR ACTUATOR	3
1R1	1	L/R	SP050 (1R)	L	H-4 TO W/H SCUTTLE I/C	20
1R2	1	L/R	H-23 EEGR ECU CONN 2	4	SP050 (1R)	L
1R3	0.5	L/R	SP050 (1R)	R	H-25 WATER IN FUEL	3
1R4	0.5	L/R	SP050 (1R)	R	H-26 ERROR LAMP	2
1Z	0.5	O	H-2 ALTERNATOR WARNING LAMP	2	H-4 TO W/H SCUTTLE I/C	2
4K	0.5	G	H-4 TO W/H SCUTTLE I/C	6	H-10 RELAY TIMER	8
5A	0.5	L	H-10 RELAY TIMER	1	H-16 INTAKE AIR HEATER RELAY	3
7A	6	P	SP030 (7A)	L	H-16 INTAKE AIR HEATER RELAY	4
7A1	6	P	SP030 (7A)	R	H-3 INTAKE MANIFOLD HEATER	1
7A2	0.5	P	SP030 (7A)	R	H-4 TO W/H SCUTTLE I/C	9
10K	6	W	2 WAY MAXI FUSE	1	H-16 INTAKE AIR HEATER RELAY	2
48A	6	B	H-19 EARTH	1	H-20 BLOCK HEATER	1
A	6	R/Y	SP020 (A)	L	2 WAY MAXI FUSE	2
A1	8	R/Y	SP020 (A)	L	H-1 ALTERNATOR B+VE	1
A3	6	R/Y	SP020 (A)	R	TO W/H SCUTTLE 2F	1
B	10	R	H-6 STARTER MOTOR.	1	I/P FOR 2 WAY MAXI FUSE BOX	1
G1	0.5	B	SP010 (G)	L	H-17 ENGINE SPEED SENSOR	1
G2	0.75	B	SP010 (G)	L	H-13 CHOKE SW 2	1
G3	0.5	B	SP010 (G)	L	H-16 INTAKE AIR HEATER RELAY	1
G4	2.5	B	SP010 (G)	R	H-4 TO W/H SCUTTLE I/C	16
G5	0.5	B	SP010 (G)	L	H-10 RELAY TIMER	2
G6	0.5	B	SP010 (G)	R	H-24 TPS SENSOR	3
G7	0.5	B	SP010 (G)	R	H-21 EEGR ACTUATOR	4
G8	1	B	SP010 (G)	L	H-23 EEGR ECU CONN 2	2
G9	0.5	B	SP010 (G)	R	H-25 WATER IN FUEL	1
I	0.5	Br/L	H-4 TO W/H SCUTTLE I/C	7	H-17 ENGINE SPEED SENSOR	3
K	4	W/R	H-4 TO W/H SCUTTLE I/C	15	H-5 STARTER SOLENOID	1
N	0.5	G/B	H-4 TO W/H SCUTTLE I/C	18	SP100 (N)	L
N1	0.5	G/B	SP100 (N)	L	H-23 EEGR ECU CONN 2	1
N2	0.5	G/B	SP100 (N)	R	H-26 ERROR LAMP	1
S	0.5	W	H-25 WATER IN FUEL	2	H-4 TO W/H SCUTTLE I/C	11
T	0.5	L/W	H-23 EEGR ECU CONN 2	3	H-4 TO W/H SCUTTLE I/C	19

Common Notes.

1. All wires are to be FLRY-B as per ISO 6722 class B, unless otherwise specified.
2. Flame retardant PP 105 DEG C corrugated tubes to be used, unless otherwise specified.
3. "#" marked branches to be covered with 150'c corrugated tubes.
4. All accessory parts such as grommet/bracket should be approved by M&M.
5. Maker of the components are as below:

Description		Maker
Wire		MSSL
Corrugated tube	105'c	MSSL
Corrugated tube	150'c	Schlemmer

6. Any deviation should be approved by M&M.
7. Wiring harness should be identified by part identification label with below details
   - Customer part no with rev.
   - MSSL code with rev.
   - Name of the wiring harness.
   - Manufacturing date.
   - Barcode.
8. View of the all multipole connectors shown from the wire insertion side.
9. Size of the cot/prot/pvc tube to be selected appropriately with maximum 20% free space of the volume.
10. Spiral taping inside the cot tube by 105'c black pvc tape and half lap taping over the cot tube by 125'c black PVC tape is to be done, unless otherwise specified.
11. All wires to be kept open from insulation by 20mm +/- 5mm from rear end of the connector, unless otherwise specified.
12. All dimensions are in mm and to be taken from rear end of the connector/back shell/adaptor and eyelets.
13. All branch take off should have cross taping by black PVC tape.
14. Clip/clamp/grommet to be fitted on desired position with the tolerance +/-5mm.
15. All unused cavities of sealed connector to be filled by appropriate dummy plugs.
16. All joints shall be mechanically crimped & covered by waterproof jelly filled HST, if specified ultrasonic welded joints can be used & minimum distance between two mid joints shall be kept
    50 -/+ 20 mm
17. Terminal crimping strength and pull out force should meet respective terminal/connector specification.
18. All eyelets shall covered by waterproof jelly filled HST.
19. W/H should be electrically tested for circuit continuity, connectors should be tested for Secondary lock fitment & all sealed connectors should be tested for seal fitment using vacuum test.
20. If mounting clips being used, the presence should be tested.
21. Appropriate usage of fuse to be checked using proper template or any other appropriate method.
22. Harness to comply M&M standard A00 029 Rev A for prohibited, restricted, reportable substances management for AFC.

COLOR CODE	COLOR DESCRIPTION
B	BLACK
BE	BEIGE
BR	BROWN
CH	CHOCOLATE
DG	DARK GREEN
G	GREEN
L	BLUE
LG	LIGHT GREEN
O	ORANGE
P	PINK
R	RED
SK	SKY BLUE
V	VIOLET
W	WHITE
Y	YELLOW
GR	GREY

CHS INSULATION SYMBOLS

QTY./SET	ONE
SCALE	N.T.S.
DATE	10.05.2017
DRAWN	VIRENDRA
CHECKED	ARBIND
APPROVED	ARBIND
HARNESS STATUS	RELEASED
THIRD ANGLE PROJECTION	
SHEET SIZE A0	NO. OF SHEET 01 OF 01

Customer	Mahindra & Mahindra
WH Code	MT56038A
Customer No.	EO07705608C91
Project Name	M STAR P2
Part Name	W/H ENGINE
Reference No.	
NO. OF WIRES	REFER WIRE TABLE
HARNESS DATUM VALUE	Black
	MOTHERSON SUMI SYSTEMS LIMITED
FORM NO. FRMWD04 REV. NO. 11	

ECN17P001861	AC	--	Refer supplier history for changes.	VSB	CM	SP	12/05/17
ECN15P000080	AB	--	L1 RELEASE	VSB	CM	SP	17/12/15
--	AA	--	L0 RELEASE	CM	CM	DS	29/06/15
E.R.NO.	LET	LOC	REVISIONS	DSNR	CKR.	APPR.	DATE

<SC> :SIGNIFICANT CHARACTERISTICS ▽ :CRITICAL CHARACTERISTICS

BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.

UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1989

DIMENSIONS

LINEAR IN mm.		OVER	0.5	3	6	30	120	400	1000	2000
		UPTO	3	6	30	120	400	1000	2000	4000
f	FINE	(X.XXX)	± 0.05	± 0.05	± 0.1	± 0.15	± 0.2	± 0.3	± 0.5	-
m	MEDIUM	(X.XX)	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
c	COARSE	(X.X)	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2	± 3	± 4
v	VERY COARSE	(X)	-	± 0.5	± 1	± 1.5	± 2.5	± 4	± 6	± 8

ANGULAR IN deg.		LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.				
	OVER	-	10	50	120	400
	UPTO	10	50	120	400	-
f	FINE (X.XXX)	± 1°	± 0° 30'	± 0° 20'	± 0° 10'	± 0° 5'
m	MEDIUM (X.XX)					
c	COARSE (X.X)	± 1° 30'	± 1°	± 0° 30'	± 0° 15'	± 0° 10'
v	VERY COARSE (X)	± 3°	± 2°	± 1°	± 0° 30'	± 0° 20'

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COMPUTER GENERATED DRAWING | DO NOT CHANGE MANUALLY

IF IN DOUBT, ASK | DO NOT SCALE | DRG SIZE : A2

MAHINDRA & MAHINDRA LIMITED
TRACTOR DIVISION
KANDIVLI(EAST), MUMBAI 400 101, INDIA.

E.R. / PROC.REQ.NO : ER18C0005268

PART NO. : 007705608C91

PART NAME : ENGINE WIRING HARNESS

MATERIAL : --

HEAT TREATMENT : --

	NAME	SIGN	DATE
CAD ENGG.	KKK		29/06/15
DESIGNER	CM		29/06/15
CHECKER	CM		29/06/15
APPR.BY	DS		29/06/15

FIRST USED TRCR. MODEL MSTAR PL-2

SCALE NTS

SHEET 1 OF 1

UNIT QTY. : 1

WEIGHT : 5.5 kg.

ALL DIMENSIONS ARE IN mm. | CHECK DRG WITH LATEST CHANGE No